

**SIDEWAYS<sup>TM</sup>**  
**FOR EASY-READING HARD COPY**

## **What if . . . your spreadsheet is too wide for your printer?**

Now you can print all the columns of your spreadsheet, all at one time, all on one continuous page. SIDEWAYS rotates your spreadsheet by 90 degrees as it prints out, so your spreadsheet columns need never fall off the edge of your printer paper again.

SIDEWAYS can print any normal (ASCII) text file of virtually any width. It will print right through the perforations of your printer paper if necessary.

SIDEWAYS offers a choice of a wide variety of type sizes, gives you complete control over margins, spacing between characters, and spacing between lines, and provides a double-strike option for added print density.

SIDEWAYS is compatible with VisiCalc and Multiplan, as well as with most word processors and editors. To print a spreadsheet, first use your spreadsheet program's "print" command to create a "print file" on your disk. Then run SIDEWAYS, tell it the name of the print file you just created, and SIDEWAYS does the rest.

**FUNK  
SOFT  
WARE**

Funk Software, Inc. P.O. Box 1290 Cambridge, MA 02238 (617) 497-6339

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by Funk Software  
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# **SIDEWAYS<sup>TM</sup>** **FOR EASY-READING HARD COPY**

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This disk contains a high-speed operating system called Diversi-DOS<sup>®</sup>, available from DSR, Inc., 5848 Crampton Ct., Rockford, IL 61111.

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## WHAT YOU NEED

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To run SIDEWAYS you will need an Apple II + , IIe, or IIC computer with at least 48K, at least one disk drive, a printer interface card, and a dot-matrix printer with dot-addressable graphics capability. For a list of currently supported printers and printer interface cards, refer to the separately enclosed "Installation Guide".

## WHAT'S ON YOUR DISK

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Your SIDEWAYS disk contains the following files:

SIDEWAYS .....this is the SIDEWAYS program

INSTALL.....this program allows you to set up SIDEWAYS for your hardware configuration (printer model, interface card, slot number)

SAMPLE.PRF.....this is a sample spreadsheet print file, which can be used immediately to demo sideways printing

The SIDEWAYS program is copy-protected. The program is recorded on both sides of the disk, so that if either side of the disk fails or is overwritten, you may run the program from the flip side. If, within 90 days of your purchase, the disk fails to boot, you may return it to us for a new copy at no charge. Registered users may order an additional backup copy of the program by sending in the enclosed backup order form, with a check for \$15.

# INSTALLING THE PROGRAM

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Before you can use the SIDEWAYS program, you must tell it the type of printer you have, the type of interface card you have, in which slot the interface card is located, and the number of data bits per byte that your printer will accept (normally 8).

1. Put your SIDEWAYS disk in Drive 1 and turn on the computer.
2. When the title screen appears, type the character "I" (for "Install"). Be sure to do this before the main SIDEWAYS menu appears.
3. The "Install" program will tell you how SIDEWAYS is currently installed, and will present a menu for changing the installation. Select whichever items need to be altered; the program will lead you through the various options in a series of menus.
4. When you have made all the necessary changes, use the "Test Interface" option to do a preliminary check of the system. This will send a line of text to your printer continuously, insuring that your selection of printer interface card and slot number were correct.
5. Now use the "Exit" option to leave the Install program and start the newly installed SIDEWAYS program.
6. Check out the system by printing the sample spreadsheet that we've included on your SIDEWAYS disk. When the SIDEWAYS screen comes up, type in "SAMPLE.PRF", followed by RETURN.

If you buy a new printer, or otherwise change your configuration, make sure you keep SIDEWAYS abreast of the new developments by repeating the above procedure.

Refer to the separately enclosed "Installation Guide" for information on particular printers and interface cards, and how they should be installed.

## STARTING UP THE PROGRAM

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Put your SIDEWAYS disk in Drive 1, and turn on the computer. First, a title screen will appear, followed, after a few seconds, by the SIDEWAYS menu. The display is illustrated below.

What you see are all the current settings of the formatting and printing options. You may alter any of these options, save the new settings to disk, select a file for SIDEWAYS printing, or exit to a different program.

The cursor always points to a highlighted field; initially, it points to the *print file* field. Use **CONTROL-E** and **CONTROL-X** to move the cursor around the screen to different fields (on an Apple IIe, use **UP-ARROW** and **DOWN-ARROW**). If you would like to alter the value of a field, simply position the cursor to that field and re-enter it.

For most of the fields, you would simply enter the new value and terminate your entry with **RETURN**, or **CONTROL-E** or **CONTROL-X**. You can use **LEFT-ARROW** or **DELETE** to delete the last character you typed, or **ESCAPE** to delete your entire entry. If your entry is invalid, you will get an error message, and the field you just entered will revert to its previous value.

The rest of the fields are “toggle” fields: you can change their contents simply by striking any alphanumeric key (such as the space bar). These fields include *horizontal form size*, *character font*, and *double strike*.



```

      S I D E W A Y S
      VERSION 1.xx
      S/N xxxxxxxx

VERT FORM SIZE: 11.00
HORZ FORM SIZE:  8.00

DOUBLE STRIKE:    OFF
FONT:             NORMAL  5 X 12 DOT MATRIX

CHAR SPACING:     1      12.00 CHARS/INCH
LINE SPACING:     3      6.40 LINES/INCH

LEFT MARGIN:      0.00
TOP MARGIN:       0.00
BOTTOM MARGIN:    0.00      51 LINES/PAGE

STARTING PAGE:    1

ENTER PRINT FILE:
=> [REDACTED]

USE CTRL-E/CTRL-X TO SELECT FIELD
   CTRL-L/CTRL-S TO LOAD/SAVE OPTIONS
   CTRL-Q TO QUIT

```

## SELECTING A FILE TO PRINT

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To print a file, position the cursor to the print file field, and type in the name of the file you want to print, terminated by **RETURN**. Enter the file name in normal DOS format:

filename[,Sn][,Dn][,Vn]

(S, D, and V are Slot, Drive, and Volume. As indicated by the brackets, they are optional parameters.)

Once printing has begun, the following is displayed:

Strike "P" to stop printing

If you do strike "P", the printer will stop printing at the current line and do a form feed.

After your file has been printed, you may once again alter the option settings, enter a new file name for printing, or exit to another program.

## Slot, Drive, and Volume

If you don't specify a Slot or Drive number, SIDEWAYS will use the default Slot and Drive. Initially, the default is the Slot and Drive from which SIDEWAYS was booted (normally Slot 6, Drive 1). Whenever you specify a Slot or Drive with a filename, it becomes the new default.

If you don't specify a filename, but type in a Slot and/or Drive number, followed by **RETURN**, SIDEWAYS will change the default Slot and Drive without attempting to print anything. You must remember to precede the Drive or Slot number with a comma. For example, to change the default Drive to Drive 2, type in:

**,D2 RETURN**

If you specify a Volume number, SIDEWAYS will match this number to the Volume number on the disk, and give you an error on a mismatch.

## Wildcards

If you don't remember the name of the file you want to print, you can examine the filenames on your disk by using a "wildcard" in the filename you enter. The equal sign (=) is the wildcard character—it stands for any sequence of characters in the corresponding position of the filename. For instance, P=W would stand for any filename starting with P and ending with W. After entering the filename with the wildcard in it, don't type **RETURN**, but use **RIGHT-ARROW** to display, one-by-one, all text files matching your entry. When the file that you want appears, type **RETURN** to print it.

Here are some examples of wildcards:

=	all files on default drive
=,D2	all files on Drive 2
=ING	all files ending in ING

## Filename Rules

Your file must be on a DOS 3.3 disk.

DOS assigns every file on your disk a “file type”, which generally describes the format or purpose of the file. The “Text” file type indicates a file composed of printable characters—this is the type of file SIDEWAYS expects, and if you enter a file of a different type, SIDEWAYS will not recognize it. Text files are indicated by the “T” code next to the filename when you CATALOG your disk.

You should not use filenames with embedded control characters, or with flashing or inverse characters.

While SIDEWAYS will handle lower-case characters in a filename, it is good practice to avoid using them. SIDEWAYS will disregard case when you use **RIGHT-ARROW** to search for a file; however, when you terminate your filename entry with **RETURN**, all the characters of the filename must be in the correct case for the file to be found.

When you use **RIGHT-ARROW** to search for a matching filename, the equal sign (=) is a wildcard; but when you terminate your filename entry with **RETURN**, the equal sign is taken literally.



### Setting paper dimensions

*Horizontal form size* refers to your paper width. It will toggle between 8 inches and 13 inches. If you have a narrow-carriage printer, you should leave it set to 8 inches.

*Vertical form size* is the distance between perforations of your printer paper. Whenever SIDEWAYS is done printing a page, it form feeds to the next multiple of *vertical form size*. It is normally set to 11 inches.

### Setting the style of the printout

*Double strike* is a toggle field which may be ON or OFF. If it's on, each line will be printed twice, for added print density.

*Character font* is a toggle field which gives you a choice of various type sizes, from TINY to EXTRA LARGE. On the right of the screen, the dimensions of the "dot matrix"—the vertical and horizontal print dots that are used to make up each character in the selected font—are shown.

*Character spacing* is the distance between successive character columns, measured in terms of the vertical dot density of the printer. You can crowd characters together, or spread them apart, by making this number smaller or larger—the resulting number of characters per inch is displayed at the right.

*Line spacing* is the distance between successive print lines, measured in terms of the horizontal dot density of the printer. You can crowd lines together or spread them apart by manipulating this value—the resulting number of lines per inch is displayed at the right.

You may set a different *character* and *line spacing* for each *character font*; when you change fonts, you automatically revert to the *character* and *line spacing* associated with the new font.

## Setting the format of the page

*Left margin* controls the amount of white space between top-of-form and the leftmost SIDEWAYS print column.

*Top margin* controls the amount of white space between the right edge of the paper and the 1st SIDEWAYS printed line.

*Bottom margin* controls the amount of white space between the last SIDEWAYS printed line and the left edge of the paper.

The amount of space available for printing is determined by subtracting *top margin* and *bottom margin* from *horizontal form size*. The program automatically computes the number of lines that will fit on each page, and displays this on the right hand side of the screen.

## Other options

*Starting page* allows you to skip over the initial pages of a print file; it is normally set to 1.

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## SAVING OPTION SETTINGS TO DISK

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Once you have set up the SIDEWAYS options as you like them, you can save them to disk by typing **CONTROL-S**, and reload them from disk by typing **CONTROL-L**.

The option settings are saved in a file called SWOPTIONS. When you type **CONTROL-S**, the current option settings are written to SWOPTIONS on the default Slot and Drive. When you type **CONTROL-L**, the option settings are loaded from SWOPTIONS on the default Slot and Drive. Remember that you can alter the default Slot and Drive by entering them in the *print file* field with a blank filename, followed by **RETURN**.

You can also save the option settings to the SIDEWAYS disk itself. If you have done so, they will be reloaded every time you boot SIDEWAYS, and you will not need to use **CONTROL-L**.

If you have one standard set of option settings that you use most of the time, it makes sense to save them to the SIDEWAYS disk. If you have different option settings used for different print files, you might want to save each of the various settings to a different disk, and use **CONTROL-L** to read them in.

Normally, when you want to print a spreadsheet, you issue a “print” command from your spreadsheet program which activates the printer directly. However, to use SIDEWAYS, you must first write a printable image of your spreadsheet to a text file on disk. SIDEWAYS uses this “print file” to create hard copy.

Your spreadsheet program documentation will tell you how to create print files from your spreadsheets; we’ve also included some hints for the more popular spreadsheet programs below.

When you tell your spreadsheet program what filename to assign to your print file, be careful! Don’t use the same name that you used for the worksheet file itself, or you could lose all your work. Create a “naming convention” and stick to it. For instance, you might append the suffix “.PRF” to the filename whenever you create a print file; thus, if you had a spreadsheet named “BUDGET”, you would call its associated print file “BUDGET.PRF”. You could then also use the SIDEWAYS file search feature to find all your print files by entering “=.PRF” followed by RIGHT-ARROW.

Some spreadsheet programs have a printing feature which is useful for normal printing, but gets in the way when you are printing sideways. These programs output the spreadsheet in sections, based on a parameter that you would supply indicating the width of your printer. Since the printing width of SIDEWAYS is virtually infinite, you want to make sure you set this print width parameter higher than the number of character columns in your spreadsheet; otherwise, your printout will be broken up into sections.

### VisiCalc Hints

To create a print file in VisiCalc, all you need to do is issue the PRINT FILE command (/PF). The program will prompt you for a filename, then for the spreadsheet range you’d like to print out.

### **Method 1 — page breaks disabled**

This method is simplest, and most resembles the original VisiCalc.

First, use the PRINT SETTINGS command to disable page breaks (/PSBN). Then, issue the PRINT FILE command (/PF). The program will prompt you for a filename, then for the spreadsheet range you'd like to print out.

### **Method 2 — page breaks enabled**

You would use this method if you want to create a formatted, multi-page spreadsheet, possibly with titles or page numbers.

You will first need to bring up SIDEWAYS, and make note of how many lines per page it is able to print, based on the formatting options you set (this number appears on the right hand side of the SIDEWAYS screen).

In VisiCalc, use the PRINT SETTINGS command to set the following:

1. Page Breaks: Enabled (/PSBY)
2. Paper Length: equal to the number of lines per page that SIDEWAYS can print (/PSF)—this matches the VisiCalc page to the SIDEWAYS page
3. Page Length: less than or equal to Paper Length (/PSP)
4. Page Width: 255—this is its maximum value (/PSW)

Then, issue the PRINT FILE command (/PF). The program will prompt you for a filename, then for the spreadsheet range you'd like to print out.

Note that since page breaks are enabled, if your spreadsheet is wider than the page width of 255 character columns, VisiCalc will print it out in sections. If so, refer to Appendix B for some techniques to deal with this problem; or use method 1 above, rather than this method, to avoid the problem entirely.

### **Multiplan Hints**

If you have version 1.05 of Multiplan or earlier, we strongly recommend that you upgrade to the latest version. Multiplan outputs very wide spreadsheets in sections based on its “print width” parameter. Multiplan version 1.05 and earlier will accept a value no higher than 165 for “print width”; version 1.06 will



accept values as high as 512. This means that with the earlier version of Multiplan it will be rather cumbersome to print spreadsheets wider than 165 character columns.

1. First, you must bring up SIDEWAYS, and make note of how many lines per page it is able to print, based on the formatting options you set (this number appears on the right hand side of the SIDEWAYS screen).
2. Run your Multiplan program.
3. Using the PRINT MARGINS command, set up the following parameters:

left margin = 0  
print width = 512 (165 if v1.05 or earlier)  
page length = the number of lines per page  
SIDEWAYS can print  
top margin = 0  
print length = same as page length

(You may, in fact, set “top margin” and “print length” however you like, as long as their sum does not exceed “page length”; the values we suggest above maximize the number of available printable lines.)

4. Use the [PRINT] OPTIONS command to specify the range to be printed.
5. Use the [PRINT] FILE command to write the print file to disk.

## CREATING TEXT FILES USING WORD PROCESSORS AND EDITORS

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SIDEWAYS will accept as input any ordinary text file created using a word processor or an editor. The text file should not include printer control sequences such as Compressed Mode, Expanded Mode, Superscript, or the like, since these are not recognized by SIDEWAYS, and could produce unwanted results. If your word processor has its own “private” format for its text files, SIDEWAYS may not be able to print them directly. However, such word processors usually allow you to “print to disk”—that is, to re-route print output to a disk file instead of the printer. SIDEWAYS should be able to read a print file created this way.

## APPENDIX A TROUBLESHOOTING

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If you are having trouble getting SIDEWAYS to operate properly, these notes may give you some clues as to what is going wrong.

The problems that you are likely to encounter can be generally divided into two types: (1) problems with the printing process, and (2) problems with the format of the text files you are trying to print.

To determine to which of these two categories your problem belongs, try printing the sample text file that is included on your SIDEWAYS disk. Boot the program, and enter "SAMPLE.PRF" in the print file field. If it does not print out correctly, then there is a problem in the printing process; if it does print out correctly, then the problem almost certainly lies in the format of the text file that you were trying to print.

If your problem is in the printing process, go back to the installation procedure, and select the "Test Interface" option to repeatedly print a line of text on your printer. If nothing prints out, or the printout has errors, you may have specified the wrong interface card or slot number.

### Problems with the printing process

#### 1. Is any data getting to the printer?

If, when you try to print, the message "Printer not ready" appears, despite the fact that the printer is online, and the cable is plugged in; or if the message "Strike P to stop printing" appears, but the printer does nothing; then it is very likely that, when you installed SIDEWAYS, you specified either the wrong Interface Card or the wrong Slot Number.

#### 2. Does the printout consist entirely of normally oriented (non-sideways) characters?

Most likely, your printer does not have graphics. Most printers come with graphics capability; on some, graphics is an option which must be purchased. It is also possible that you specified the wrong printer when you installed SIDEWAYS.

### 3. Is the printout an amalgam of sideways characters and normally oriented characters? are the sideways characters misregistered?

There could be various explanations. The cable to the printer may be loose, or faulty. If you are using an external printer buffer, try removing it from the circuit and see if the problem persists. It is also possible that you specified the wrong printer or interface card when you installed SIDEWAYS.

If you have a serial, rather than parallel, printer interface, it could be that your cable is not carrying the printer's "handshake" signal back to the interface card, and the printer is being overrun by data coming in too quickly. SIDEWAYS sends a large volume of graphics data to the printer at very high speeds, and it is entirely possible that a cabling error of this kind would cause no problem at all when printing text, but would show up immediately when printing in graphics mode. Try reducing the baud rate—if this alleviates the problem, then your cable is very likely at fault and should be replaced.

If you have a printer which is not manufactured by Epson, but is supposed to use the same control codes as Epson printers, this may be the culprit. Many such "lookalikes" operate just like an Epson, and won't cause any problems; others have slight differences and may not operate properly. Besides the standard Epson installation options, we've also provided "lookalike" installation options which use somewhat different techniques to operate the printer. Try re-installing SIDEWAYS using these alternatives—hopefully one of them will work.

#### Problems with the format of the text file

1. Does the printout contain information that you would expect to see in your file, but organized in a totally different way?

You are probably printing the wrong sort of file. When you are using a spreadsheet program, the worksheet file that you load and save is in the program's own private format—you shouldn't try to print this file. Your spreadsheet program should also be capable of creating a "print file", with all the worksheet information in displayable, or printable, form; this is the type of file that you should print. Reread the section above: "Creating spreadsheet print files".

**2. Does your spreadsheet print out in sections; that is, do you get some of the columns of your spreadsheet on one page, followed by a formfeed, then the rest of the columns on a second page?**

Some spreadsheet programs will section a spreadsheet as it prints it out, in order to accommodate wide spreadsheets to narrow printers. If this has occurred, your sideways printout will have the kind of dislocations described above.

In order to prevent the spreadsheet program from sectioning your printout, you should set its printing width parameter as high as possible. Refer to the section “Creating spreadsheet print files” for specific information about the printing width capabilities of various spreadsheet programs. If your spreadsheet program will not accept a value for its printing width that is high enough to accommodate the entire width of your spreadsheet, then you will have to use one of the strategies outlined in Appendix B in order to get the proper printout.

**3. In a formatted, multi-page printout, is the 2nd page of the spreadsheet not appearing at the top of the 2nd page of the printout?**

In a formatted printout (such as in Multiplan), one of the parameters you specify to the spreadsheet program is the page length. You should be sure to set the spreadsheet program’s page length equal to the number of lines per page that SIDEWAYS can print (as displayed on the SIDEWAYS screen). The spreadsheet program will pad out each page with blank lines, up to the page length: if page length is too high, some of those blank lines will appear at the top of the second sideways page, forcing the data down; if page length is too low, lines from the second page will appear at the bottom of the first sideways page.

**4. In a printout of a VisiCalc spreadsheet, are there individual cells which appear in the wrong place—in the correct row, but 20 or 30 cells to the left of where they should be?**

This problem can occur in VisiCalc print files when the spreadsheet is very wide and contains many blank cells all in a row. Refer to Appendix C for a complete discussion of the problem.

## APPENDIX B

### IF YOUR SPREADSHEET IS WIDER THAN YOUR SPREADSHEET PROGRAM'S MAXIMUM PRINTING WIDTH

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We mentioned above that some spreadsheet programs automatically break very wide spreadsheets into sections as they print out, in order to limit the width of each page to the width of the printer; for SIDEWAYS printing, you should specify as wide a print width as possible, in order to prevent this unwanted sectioning.

Some spreadsheet programs may be limited in how high a number they will accept for the printing width parameter. For example, Multiplan v1.06 will not accept a “print width” greater than 512 (v1.05 or earlier is limited to 165). If your spreadsheet is wider than this limit, you will not be able to prevent the program from sectioning it.

Here are a couple strategies to get around this problem.

1. Create multiple print files and string them together.

Divide your spreadsheet into segments that do not exceed the spreadsheet program's printing width, and create a separate print file for each segment. Now run SIDEWAYS, and print these files side by side, creating a single, very wide printout. Be sure to set *vertical form size* to 0; this will prevent formfeeds from occurring between the segments.

2. Create a single print file, with page-breaks adjusted so that successive sections appear on successive pages.

Set the page-length in your spreadsheet program to match the number of lines per page in SIDEWAYS, and make sure that the rows of the print range all fit within a single page. Run SIDEWAYS, set *vertical form size* to 0, and print the file. Each section will thus be printed on a new page, exactly adjacent to the previous section, thereby creating a single, very wide printout.

## APPENDIX C

### A GLITCH IN VISICALC

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There is one problem that you might run into when printing VisiCalc spreadsheets, if the spreadsheet is quite wide (more than 256 character columns) and if it contains many blank cells all in a row.

If a row of your spreadsheet contains a sequence of cells which are all blank, followed by a non-blank cell, and if the total number of blank character columns is 256 or more, then VisiCalc will “lose” 256 blank character columns, and shift the non-blank cell that far to the left when creating the print file.

For instance, let’s say that in row 14 of your spreadsheet, you have data in columns A and B, columns C through AF are blank, and data once again appears in column AG. Thus, there are 30 blank columns in sequence, with 9 characters per column, for a total of 270 character columns of blanks. VisiCalc will lose 256 out of those 270 blanks, and when the spreadsheet is printed, AG14 will have been shifted left by 256 columns, and will appear at about the position of D14.

The most direct way around this problem is to insure that you never have a sequence of 256 blank character columns in any row. If your spreadsheet does have this many blank columns, pick a cell somewhere in the center of the sequence of blanks, and put some inconspicuous printable character in it, such as a “.”, or a “0”. Having broken up the long sequence of blanks into two shorter sequences of blanks, the spreadsheet will print out correctly.

Another way around this problem would be to create two spreadsheet print files, one for the left half, and one for the right half of the spreadsheet. You would then print them out side by side. As long as neither of the two halves contain a string of 256 blanks, the problem will be obviated. When you do this, be sure to set *vertical form size* to 0; this will allow the two halves to be printed continuously, without an intervening form feed.



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Occupation \_\_\_\_\_ Tel. # \_\_\_\_\_

SIDEWAYS Version # \_\_\_\_\_ Serial # \_\_\_\_\_

(these are displayed at the top of the screen when you run the program)

Purchased from \_\_\_\_\_ Date \_\_\_\_\_

Computer brand and configuration \_\_\_\_\_

Printer brand and model number \_\_\_\_\_

Printer interface card \_\_\_\_\_

Spreadsheet or other software you use SIDEWAYS with \_\_\_\_\_

\_\_\_\_\_

How did you hear about SIDEWAYS?

☐ Computer store      ☐ Computer show      ☐ Word-of-mouth

☐ Advertisement in \_\_\_\_\_ magazine

☐ Article in \_\_\_\_\_ magazine

☐ Other \_\_\_\_\_

Comments about program \_\_\_\_\_

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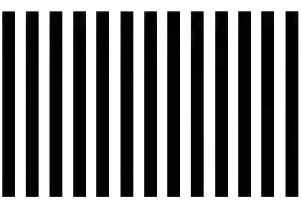
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